

In rejecting the above claims, the Office Action stated that *Liu discloses all of the features of the claimed invention except that Liu does not specifically disclose performing a chemical vapor etching step with HF on the masked undoped dielectric layer to remove the implanted/doped region having a depth that does not exceed a thickness of the undoped dielectric layer. However, Violette discloses a method for forming a dielectric structure comprising the step of performing a chemical vapor etching step with HF to remove the implanted/doped region 18 having a depth that does not exceed a thickness of the undoped dielectric layer 16. Since both Liu and Violette are concerned with a method of etching to remove an implanted/doped region in a dielectric layer, one skilled in the art would have found it obvious to modify Liu's step of etching the masked undoped dielectric layer 22 to remove the ion implanted/doped region by using a vapor etching step with HF to remove the implanted/doped region as per Violette because Violette teaches that HF/HF vapor removes doped silicon dioxide at a faster rate than undoped silicon oxide allowing the formation of specialized silicon dioxide/dielectric structure and HF based etchant will not harm silicon substrate.*

Applicants respectfully disagree and traverse the above rejections as set forth below. Independent claim 1 is allowable over Liu and Violette for at least reason that both Liu and Violette failed to teach, suggest or disclose every features of the claimed invention. More specifically, Liu and Violette failed to teach, suggest or disclose at least the steps of "*forming a doped dielectric layer on the substrate; and forming an undoped dielectric layer on the doped dielectric layer,*" as required by claim 1. Liu does not teach to form a doped dielectric layer on the substrate. The first dielectric layer 12 of Liu is not a doped dielectric layer. Only a portion of the dielectric layer 12 exposed by etch stop layer 14 and photoresist layer 16 is selectively ion implanted with a first ion implantation treatment 20. Col. 8, lines 22-27. Further, the second dielectric layer 22 of Liu is not formed on the first dielectric layer 12, rather, it is formed on the etch stop layer 14. Col. 9, lines 16-20. Clearly, the function of the etch stop layer 14 is totally different from that of the undoped dielectric layer of the resent invention.

Furthermore, clam 1 recites "performing a chemical vapor etching step with the mask on the undoped dielectric layer to remove the doped region, thereby forming a

second opening that exposes a portion of the undoped dielectric layer below the doped region". The Office Action acknowledged that Liu does not teach this feature, but cited Violette to supply this missing element. Violette does teach implanting an upper portion (18) of silicon dioxide layer 16 and left a non-selected lower portion 20 unimplanted. However, Violette fails to teach that, in next chemical etching process, only the implanted portion is removed while the unimplanted portion remains as required by claim 1. Instead, Violette specifically teaches that "[T]he selected portion of layer of silicon dioxide 16 is completely removed, along with a small portion of the non-selected portion, leave only spacers 22. Col. 4, lines 10-12, Figs. 2 and 3. While in the present invention, the implanted portion of the undoped dielectric layer is removed by the chemical vapor etching step, while the remaining undoped portion is removed by a dry etching step. Therefore, Violette cannot cure the deficiencies of Liu.

Accordingly, Applicants respectfully submit that Liu and Violette cannot meet the claimed invention as defined in claim 1. Further, since other claims 2-15 depend from claim 1, therefore claims 2-15 also patently define over Liu and Violette for at least the same reasons as discussed above.

For at least the foregoing reasons claims 1-15 patently define over prior art of record. Reconsideration and withdrawal of these rejections is respectfully requested.

2. *The Office Action rejected claims 16, and 18-19 under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Violette.*

Applicants have canceled claims 16-19 without prejudice or disclaimer. The rejection is moot.

3. *The Office Action rejected claim 17 under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Violette and in further view of McDaniel et al. (US-6,350,679, hereinafter McDaniel).*

Applicants have canceled claim 17 without prejudice or disclaimer. The rejection is moot.

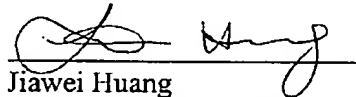
CONCLUSION

For at least the foregoing reasons, it is believed that all remaining claims 1-15 are in proper condition for allowance. If the Examiner believes that a conference would be of value in expediting the prosecution of this application, he is cordially invited to telephone the undersigned counsel to arrange for such a conference.

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4 Venture, Suite 250
Irvine, CA 92618
Tel.: (949) 660-0761
Fax: (949)-660-0809

Respectfully submitted,
J.C. PATENTS



Jiawei Huang
Registration No. 43,330